

REMARKS

Claims 1-3, 6, 8-12, 15-17 and 20-24 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Urano et al. (U.S. Pat. No. 5,621,334). This rejection is respectfully traversed. Claim 1 calls for a liquid-crystal-panel evaluating method for optically evaluating a liquid crystal panel. The method comprises making polarized light in a predetermined state be incident upon the liquid crystal panel; and increasing a ratio of a polarized component of specularly reflected light, formed as a result of reflection of the incident light, transmitted through a liquid crystal layer of the liquid crystal panel to form detection light in order to evaluate the panel based on the detection light.

In contrast, Urano merely discloses measuring light intensity (infrared light) having passed through a liquid crystal layer as a function of time. Urano is completely silent with respect to the technical problem solved by the claimed invention. That is, Urano does not disclose increasing the quantity of the detection light available so that it is possible to increase the precision of detection nor receiving specularly reflected light at color photometers instead of just diffused light. Likewise, Urano is completely silent with respect to the claimed evaluating method which is to increase a ratio of a polarized component of specularly reflected light which is transmitted through the liquid crystal cell.

Claims 2 and 3 depend from claim 1. Accordingly, these claims should be allowable for at least the reasons as set forth above.

REJECTION UNDER 35 U.S.C. § 103

Claims 4, 6, 8-13, 15-18, and 20-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirosawa (U.S. Pat. No. 6,151,116) in view of Urano (U.S. Pat. No. 5,621,334). This rejection is respectfully traversed.

Claims 4, 8, 9, and 10 depend (directly or indirectly) from claim 1 and should be allowable for at least the same reasons as set forth above.

Claim 6 calls for a liquid-crystal-panel evaluating method for optically evaluating a liquid crystal panel including a liquid crystal layer. The method comprises making linearly polarized light including a first vibration plane be incident upon the liquid crystal panel; and forming a polarized component of reflected light, formed by reflection of the incident light, including a second vibration plane substantially perpendicular to the first vibration plane, as detection light in order to evaluate the panel based on the detection light.

As stated above, Urano does not disclose the technical problem solved by the claimed invention, nor the claimed evaluating method. Hirosawa fails to cure this deficiency. That is, Hirosawa merely discloses analyzing the incidence orientation dependency of the polarization state of a reflection light generated when an infrared ray is incident on the sample surface (col. 3, lines 27-31). As seen in FIG. 1, the infrared ray reflected from the surface of sample 9 is detected by detector 8. As such, Hirosawa fails to disclose forming a polarized component of reflected light, formed by reflection of the incident light, including a second vibration plane substantially perpendicular to the first vibration plane, as detection light in order to evaluate the panel based on the detection light as claimed.

Since neither Urano nor Hirosawa teach the claimed invention, the combination thereof cannot render the claims unpatentable.

Claim 11 calls for a liquid-crystal-panel evaluating device for optically evaluating a liquid crystal panel. The device comprises polarizing illumination means for illuminating the liquid crystal panel with polarized light in a predetermined state; detection light obtaining means for receiving specularly reflected light sent forth from the liquid crystal panel and increasing a ratio of a polarized component of the specularly reflected light transmitted through a liquid crystal layer of the liquid crystal panel in order to obtain detection light; and light detecting means for detecting the detection light.

As stated above, neither Urano nor Hirosawa discloses the technical problem solved by the claimed invention. Likewise, neither reference discloses the claimed evaluating device. That is, Hirosawa merely discloses analyzing the incidence orientation dependency of the polarization state of a reflection light generated when an infrared ray is incident on the sample surface (col. 3, lines 27-31). As seen in FIG. 1, the infrared ray reflected from the surface of sample 9 is detected by detector 8. As such, Hirosawa fails to disclose detection light obtaining means for receiving specularly reflected light sent forth from the liquid crystal panel and increasing a ratio of a polarized component of the specularly reflected light transmitted through a liquid crystal layer of the liquid crystal panel in order to obtain detection light as claimed.

Since neither Urano nor Hirosawa teach the claimed invention, the combination thereof cannot render the claims unpatentable.

Claims 13, 15, 16, and 17 depend (directly or indirectly) from claim 11 and should be allowable for at least the same reasons as set forth above.

Claim 12 calls for a liquid-crystal-panel evaluating device for optically evaluating a liquid crystal panel including a liquid crystal layer. The device comprises polarizing illumination means for illuminating the liquid crystal panel with linearly polarized light including a first vibration plane; detection light obtaining means for receiving reflected light sent forth from the liquid crystal panel, and removing a polarized component of the reflected light including the first vibration plane in order to obtain detection light; and light detecting means for detecting the detection light.

As stated above, neither Urano nor Hirosawa discloses the technical problem solved by the claimed invention nor the claimed evaluating device. Hirosawa merely discloses analyzing the incidence orientation dependency of the polarization state of a reflection light generated when an infrared ray is incident on the sample surface (col. 3, lines 27-31). As seen in FIG. 1, the infrared ray reflected from the surface of sample 9 is detected by detector 8. As such, Hirosawa fails to disclose detection light obtaining means for receiving reflected light sent forth from the liquid crystal panel, and removing a polarized component of the reflected light including the first vibration plane in order to obtain detection light as claimed.

Since neither Urano nor Hirosawa teach the claimed invention, the combination thereof cannot render the claims unpatentable.

Claims 18, 20, 21, and 22 depend (directly or indirectly) from claim 12 and should be allowable for at least the same reasons as set forth above.

ALLOWABLE SUBJECT MATTER

The Examiner states that claims 5, 7, 14, and 19 would be allowable if rewritten in independent form. Applicant thanks the examiner for the thorough examination given these claims. Applicant elects to defer rewriting these claims in independent form until after the examiner considers the above remarks.

NEW CLAIMS

New claims 23 and 24 are added. These new claims call for a method of manufacturing a device using the evaluating method of claims 1 and 6 respectively. Favorable consideration of these new claims is respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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